Group Memory

Contractor Forum

June 3, 2009

1	8:30	Registration and Networking Everyone Preparation
2	9:00	Welcome and Introductions Wilder/Abercrombie
3	9:15	Opening Remarks Rob Stott Updates

1. Opening remarks
    1. 1. Goals: Discuss three new initiatives--
        1. 1. 1. Tire noise reduction on bridge decks,
        1. 1. 2. Contractor quality control testing, and
        1. 1. 3. Accelerated bridge construction.
    1. 2. Highway Maintenance (HM) projects are an increasing part of the CT workload. We want to pinpoint recurring problems and improve the product we deliver to the contractors to make it more biddable and more constructible.
    1. 3. We want to collect industry concerns and suggestions.
    1. 4. We will prioritize what we have heard.
    1. 5. We want to identify industry partners to be a part of the improvement process.
    1. 6. This is the seventh forum.
    1. 7. Industry participation is essential to success. Biggest impact is hearing what we hear from you; what you say here today.
    1. 8.

4	9:30	Reducing Vehicle Deck Noise John Drury Discussion & Action Items

2. Quiet Pavement - reducing deck noise.
    2. 1. Why? Construction practices can immediately bring improvement without using new methods and new technology… Public outcry CT is receiving about traffic noise – is driving the discussion. Excessive noise is annoying, unhealthy and costs money.
    2. 2. What? The sound emitted from tire-pavement interaction. Pavement texture, the tire, the vehicle speed and the environment affect the noise level. Small and negative texture, high porosity and low stiffness improve tire noise.

2. 3. On-board sound intensity system (OBSI) picks up specific tire noise. The OBSI system is used by CT, but there is no certified test method at this time. That is about 2 years away.

2. 4. Current highway noise mitigation method is primarily sound walls, and building insulation and sound proofing. Sound walls cost between 1 AND 5 MILLION PER MILE.

2. 5. Deck textures are transverse astro-turf, transverse tining and burlap.

2. 6. Caltrans does not track pavement data by bridge – it is done by post mile.

2. 7. How can we improve? Short term: Diamond grind texture, long term – performance spec, $ incentive, and innovation.

2. 8. Discussion:

2. 8. 1. How do you know friction will be a problem with a smoother pavement? We should have Caltrans take a project and test the ideas out –

2. 8. 2. Hydroplaning may be an additional issue when we start doing anything to reduce the friction, and reduce the noise.

2. 8. 3. Caltrans needs data to compare apples to apples. Different bridge types have different noise characteristics. We don't know enough at this time to go full bore with grinding.

2. 8. 4. Polyester concrete has significantly smaller aggregate.

2. 8. 5. Saw Cut grooves would be negative, and significantly smoother – and would help with drainage.

2. 8. 6. Compare grinding to any overlay. Which is cheaper?

2. 8. 7. Do we really know what the complaints are about? Is it more approach slabs and joint seals? Approach slabs settle over time.

2. 8. 8. Transverse tining is different than transverse drag. Caltrans specifies texture and friction, and this is a counterproductive approach. We are forced to put aggressive texture on the bridge deck because we know the testing for friction will be done on a section of the bridge least likely to pass. (Caltrans does not have friction problem, but we do have a noise problem with current bridge decks.)

2. 8. 9. Asphalt overlay should be looked into.

2. 8. 10. Methacrylate a brand new deck and then overlay it with rubberized asphalt.

2. 8. 11. Use Polyester concrete longitudinally tined -- Lower modulus material. It is quiet. Doyle Drive was tined longitudinally.

2. 8. 12. Mix design is still easy to texture. It needs to be easy to texture throughout the pour.

2. 8. 13. Can we get data from Florida on deck noise and friction?

2. 8. 14. If grinding is a solution, and you know you have to 100% grind at the start, and you know when you bid the job, you would be able to eliminate noise, meet the profile spec and estimate an additional cost of $1.00 per

square foot. You would be able to completely ignore the coefficient of friction during the pour, also – the texture would be taken care of later.

2. 8. 15. You will see hairline cracks if you grind the deck. Will you then require us to methacrylate, the deck?

2. 9. Outcome

2. 9. 1. Establish an industry team – Mike Orear, Jack Hobbs, Al Klail, Jeff Foerste

5	10:30	Break Everyone Refresh
6	10:45	Contractor Concrete Quality Control John Lammers Discussion & Action Items

3. Contractor Concrete Quality Control John Lammers Discussion & Action Items

3. 1. Caltrans is exploring the concept of having the contractor provide quality control and testing of concrete.

3. 2. QC – operational techniques and activities that are used to fulfill requirements for quality. QA is systematic activities implemented to ensure adequate confidence that the QC will work …

3. 3. Why? Reduce cost, maximize opportunities to better coordinate sampling and testing with contractor's construction activities, improve consistency in the amount of testing performed on CT administered jobs vs. contracts administered by others.

3. 4. Spec will require a QC plan that outlines manager for QC, testers, technicians, labs; sampling, testing, decision making and reporting procedures.

3. 5. Spec will outline what test, what frequency is required.

3. 6. FHWA requires a resolution process when there are discrepancies between QC and QA. FHWA also requires an independent assurance program.

3. 7. Discussion:

3. 7. 1. Get electronic certification so certification is instantly available on a web site.

3. 7. 2. Does it have to be an independent test company doing the QC?

3. 7. 3. What is the final documentation? What is the final sign-off?

3. 7. 4. Extend to all QC/QA concrete tested by Caltrans and other tests like compaction, all concrete elements.

3. 7. 5. Make it its own bid line item: If you include all concrete QC (including plant inspection) it is easier for the lab to bid competitively.

3. 7. 6. Integration of all concrete testing across the job across all items and all subcontractors. (likely needs to be the general's responsibility?)

3. 7. 7. This will not really save you any money, but if you are going to do it, either the contractors take it all or none of it.

3. 7. 8. Get rid of Kelly ball.

3. 7. 9. Consider using outside agencies for accreditation and certification. The process for getting labs certified is very cumbersome. The CT IA guys are overworked. We have to schedule appointments, pull people off of work, etc. It requires a lot of (too much) coordination. CT needs to either increase the capacity or get an outside agency to do it. Streamline the process

3. 7. 10. What happens when QCQA fails?

3. 7. 11. Extend certification. (if cert ends while you are on a job, you have to recertify..

3. 7. 12. Operation to extend certification to the end of a job when certification otherwise expires mid-way through… Could you have a QA guy come out to verify a QC operation to certify that the contractor is doing everything right?

3. 7. 13. Testing labs doing QA need to be up to the task. (Low bidder concern).

3. 7. 14. QC plans – a problem when we have to submit job specific plans every time. Can you do company-wide plan instead? Are the plans really necessary? Specs cover it.

3. 7. 15. Eliminate the QC plan.

3. 7. 16. Clearly state requirements for QCM.

3. 7. 17. QC manager – who employs this person?

3. 7. 18. Will CT do pay factors, like with asphalt?

3. 7. 19. Certification should be valid on all jobs.

3. 7. 20. Conflict OF Interest (COI) issue. CT on-call vs. working for the contractor.

3. 7. 21. Need buy-in from districts on what we work on with DES and industry.

3. 7. 22. What if the supplier gets certified? (COI issue?)

3. 7. 23. Why can't a contractor certify his own testing?

3. 7. 24. Expand to plant inspection?

3. 7. 25. Are districts handling this independently?

3. 7. 26. Consider oversight aspect.

3. 7. 27. Concerned about duplication of effort between QC and QA. Will this really allow a savings? You will spend nearly as much on QA and contractor QC will go up.

3. 7. 28. Suppliers already do mix qualification tests. Why would it be a conflict to have them do the QC?

3. 7. 29. Contractor-provided surveying did not go well in the past.

3. 7. 30. Let us to all the QC/QA including soils compaction testing.

3. 7. 31. Bid Line item for testing.

3. 7. 32. If contractors did it all it would allow us to control schedule better; it would cost more.

3. 7. 33. (No consensus on whether contractors want to take it all on.)

3. 7. 34. Reduce the number of cylinders tested. (Some think it is risky.)

3. 8. Outcome:

3. 8. 1. Wait and see list: Craig Huss, Garrett Fontaine, David Kennedy, Cal Dickerman, Ron Thomson.

7	11:45	Lunch Everyone Recharge
8	12:15	Accelerated Bridge Construction Mike Beauchamp Presentation & Questions

4. Accelerated Bridge Construction Mike Beauchamp Presentation & Questions

4. 1. ABC is part of accelerated project delivery – delivering transportation projects sooner…. Delivering the bridges sooner, reducing construction time, reducing impact to traffic.

4. 2. Discussion:

4. 2. 1. Electronic working drawing working? (Troy) that was effective.

4. 2. 2. Concern about shop drawing submittals to Sacramento – “Black hole.)

4. 2. 3. Are drawings being reviewed electronically or printed out and marked up by designer?

4. 2. 4. Segmented columns – problems keeping them plumb? Match casting recommended.

4. 2. 5. Why not fifteen to twenty foot precast column sections? Putting tow together would be better than four or five…

4. 2. 6. Hoover Dam job – follow up on their experience.

4. 2. 7. Watch out you don’t get smashed to a pulp.

4. 2. 8. Fit all the rebar through one large diameter hole, rather than a bunch of single bar holes.

4. 2. 9. Segmental abutments: Why not match cast? Easier than closure pours.

4. 2. 10. Steel weld plates for pile abutments.

4. 2. 11. Give the entire design to the contractor.

4. 2. 12. Grade control with cast abutments – things need to be set right at the start –

4. 2. 13. Design piles for down drag due to settlement. Save time.

4. 2. 14. Pour the seat with set45. Allow adjustment at the top.

4. 2. 15. Accelerate closure pours. Caltrans research is under way now. Will be completed the end of this year.

4. 2. 16. Precast deck panels.

4. 2. 17. Look at accelerated bridge removal particularly in urban areas.

4. 2. 18. Certified pre-cast yards is an impediment. Don't lock yourselves into old practices. More on-site casting. More in-the-field work. Clean up language prefabricated vs. precast.

4. 2. 19. For precast abutments it looks like you are not going to save an enormous amount of money.

4. 3. Send any other ideas to Mike.Beauchamp@dot.ca.gov

9	1:00	Recap Morning: Prioritize and Actions Halverson, Wilder & Abercrombie Commitments & Planning

Agenda item 9: The re-cap was done, and two lists of names were made to address the issues. Done – see outcomes above for Topics #4 and 6. Also note the underlined points in sections above; these will be focus areas for 2009 Bridge Forum Initiatives.

10	1:30	HM3 – B56ridge Maintenance Projects Introduction Abercrombie Information

5. Bridge Maintenance Projects Introduction:

5. 1. HMW Methacrylate Concerns – quality, consistency and longevity; repair of deck delaminations, full penetration of the cracks. Adequate surface friction.

5. 2. Polyester overlays: resurface deteriorating decks, abrasion resistance on new decks, crown corrections on widenings.

5. 3. Polyester concrete overlays: quality, consistency, longevity. Repair of deck delaminations, grade control, density and bond strength, adequate surface friction.

5. 4. Developing specs: Increasing working plans, air monitoring, limits on temperature and moisture, mixing requirements, set times and lane openings, grade control.

5. 5. Bid packaging: Lager grouping of structures, FHWA constraints, and limited resources with regards to site investigations ahead of time.

11	1:45	HM# Topic #1: Engaging Contract Partnering Caltrans & Industry Discussion & Action Items

6. Engaging Contract Partnering

6. 1. Quantities for deck repair are frequently wrong.

6. 2. Absorption rate of Methacrylate varies greatly.

6. 3. Unqualified lane closure for testing.

6. 4. Inefficient traffic charts.

6. 5. Discussion

6. 5. 1. Cure time – don't always need four hours. Sometimes two hours is acceptable. No specific time for methacrylate; four hours for polyester is too long.

6. 5. 2. Use of Schmidt hammer is only for relative strength- comparing one to another, but you don't know what the actual strength is – just that one place is harder than another.

6. 5. 3. The 109 test – sometimes applied by certain RE's incorrectly. Presently it does not account for the fact that it is looking for cement and water. We need a standard/new method for measuring yield. Caltrans needs to put out an internal memo on how to deal with this. This needs to be modified to account for volumetric mixes. (Mark Long, Dave Wilkerson, Basil Miranda (HQ Const) volunteered)

6. 5. 4. Could cores be done in the same shift?

6. 5. 5. Is it really an issue to identify work with supplemental funds? (Question for OE)

6. 5. 6. Traffic windows do not allow enough time if we follow the spec cure times.

6. 5. 7. Don't have enough time to put traffic control in, get the equipment there and allow required (per spec) cure time.

6. 5. 8. Is there another measure of hardness? There are a lot of new tools, improvements in materials, but specs do not reflect this. Still dinosaurs.

6. 5. 9. Oregon and Washington are using Schmidt Hammer as a go/no-go test.

6. 5. 10. Develop a test method using the Schmidt hammer.

6. 5. 11. Does surface thickness affect the reading of the Schmidt hammer?

6. 5. 12. We need a better definition – more information in the plan on grade control for finished deck surface.

6. 5. 13. Porosity of the concrete itself varies widely from one bridge to another. (See discussion on spread rates.)

6. 5. 14. Mike Johnson mentioned several research efforts – (Montana State U, others…) hopes to have information to guide CT inspectors' policy as to what maintenance inspectors need to recommend in what circumstances. Caltrans has cores at Translab which are awaiting test results. Caltrans may be taking some more cores; perhaps one more summer's worth of cores.

6. 6. Outcome

6. 6. 1. Caltrans needs to put out an internal memo on volumetric mixes. (Mark Long, Dave Wilkerson, Basil Miranda (HQ Const) volunteered)

12	2:30	HM# Topic #2: The Future of HMWM Seal & Polyester Concrete Technology Caltrans & Industry
13	3:15	Break Everyone Recharge

7. **Methacrylate: Spread rates, mixing batches and prep methods.**
   7. 1. **Spread rate – does not adequately cover the deck at this time.**
   7. 2. **Excessive** brooming may disturb the wax seal.
   7. 3. D-7 has told us not to allow ten gallon batches.
   7. 4. 100 sq. feet per gallon is for a perfect surface.
   7. 5. Excessively grooved deck may take more methacrylate.
   7. 6. The CT engineers (structures reps) need training on methacrylate - as to what the material is, how it performs, and how it needs to be applied.
   7. 7. Can we get state furnished methacrylate?
   7. 8. Need to revise the spec so you have a reasonable budget.
   7. 9. Would be good to have a methacrylate/polyester subject matter expert to show up on the jobs and train people on the material…

8. Methacrylate in overheads
   8. 1. Structures Maintenance. / Mike Johnson wants to know about the use of Methacrylate in overheads. Where there is through cracking, the bridge is painted first, and this causes us to have to get a railroad agreement. This is very time consuming. And expensive.
   8. 2. Group discussion
      8. 2. 1. Why the concern about overheads?
      8. 2. 2. We don't want any bridge to drip methacrylate under any circumstances.
   8. 3. Outcome:
      8. 3. 1. We need to look at options.

9. End result (performance based) spec for methacrylate:
   9. 1. CT is changing over to "plain language" specifications. This will delay changes in specs for the present time.
   9. 2. The old way is good – do the first couple; they are representative, and call it good.

9. 3. Skid testing: Some consensus that skid testing is not necessary when sand is spread and methacrylate is cured.

9. 4. There is no limitation on air monitoring for contractors to bid. What is the goal for air monitoring?

9. 5. We need a limit on the amount of air monitoring tests. Need to create a baseline for the number of tests.

9. 6. Public notification is not well defined for bidding.

9. 7. Performance test ideas for polyester:

9. 7. 1. Adhesion test

9. 7. 2. Burn-out test to determine resin content.

9. 7. 3. Test modulus. (hard as possible to avoid delamination) Oregon has this in their spec.

9. 7. 4. Unit weight

9. 7. 5. Relative compaction. (May not be producing useful results)

9. 8. Humidity and temperature.

9. 8. 1. Is this contrary to performance based spec?

9. 8. 2. Methacrylate and polyester: Should go to 45 degrees. 50 is too high.

9. 8. 3. 100 is OK.

9. 8. 4. Relative humidity needs to be increased. Possibly in conjunction with a bond test; for the poly jobs, not methacrylate.

9. 9. Use absorbents on all projects – good insurance policy.

9. 10. A separate bid item for air monitoring is a good idea.

9. 11. How does training get implemented, and when?

9. 12. Why not have the RE's who know how to do this kind of work do it? Why keep sending the rookies out?

9. 13. Why was sand gradation changed?

9. 14. May not need dust free sand anymore. Dust is absorbent.

9. 15. Outcome

9. 15. 1. Establish a training group.

14	3:30	HM# Topic #3: Bid Package Irregularities Caltrans & Industry Discussion & Action Items

10. Bid Package Irregularities

10. 1. Need earlier starts – if we are going to take a risk, take it on the start end.

10. 2. You can get a lot of savings by adding a little time to the closure window. Union contractors pay a full eight hours no matter how much work time is available (less than 8 hour shift) An 8 hour closure (four hours of cure, remainder of time is work time, so it could be double the work for the additional two hour increase in the closure window.)

10. 3. SB/DVBE stacked credit. (10% for SB/DVBE) This impacts competitive bidding.

10. 4. Bid Lump sum to be paid as force account on deck repair item – this will yield a much larger area of repair but it will level the playing field for bidding.

10. 5. Outcome

10. 5. 1. Establish a review team of option, including DES OE

10. 5. 2. Research practices in other states.

15	4:15	Next Steps-review action items Halverson, Wilder & Abercrombie Commitments & Planning
16	4:30	Adjourn

Agenda item 15: The re-cap was done, lists of names were made to address the issues. Done – see outcomes above for Topics #11, 12 and 14. Also note the underlined points in sections above; these will be focus areas for 2009 Bridge Forum Initiatives.